SECTION 00857

PRECAST NOISE WALL REPAIR

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Materials and procedures for repairing or replacing damaged Precast Noise Wall.

1.2 RELATED SECTIONS

A. Section 01571: Temporary Environmental Controls.

B. Section 02061: Select Aggregates.

C. Section 03055: Portland Cement Concrete.

D. Section 03152: Concrete Joint Control.

E. Section 03211: Reinforcing Steel and Welded Wire.

F. Section 03310: Structural Concrete.

G. Section 03390: Concrete Curing.

1.3 REFERENCES

A. AASHTO Standard Specifications for Highway Bridges.

1.4 SUBMITTALS

A. Submit plan for matching existing panel texture, color, and pattern.

1.5 HANDLING, SHIPPING, AND STORAGE

A. Shipment Acceptance: Panels or posts may be accepted for shipment and marked with an orange UDOT sticker if they:
   1. Meet the 28 day compression test.
   2. Are cured and sealed according to specification.
   3. Are not cracked or damaged.

B. Do not ship any panel or post that does not satisfy strength requirements.

PART 2 PRODUCTS

2.1 MATERIALS FOR PRECAST NOISE WALLS AND RETAINING WALLS

A. Precast Wall Panels and Posts:
   1. Concrete Class AA(AE). Refer to Section 03055.
   2. Type II cement.
   3. Slump requirement need not be met.
   4. 28 day minimum compressive strength of 5,000 psi.

B. Post Hole Concrete: Concrete Class B(AE). Refer to Section 03055.

C. Reinforcing Steel: Coated Grade 60. Refer to Section 03211, part 2.

D. Welded Wire Fabric: Coated. Refer to Section 03211.

E. Curing Compound: Type I, Class A. Refer to Section 03390.

F. Gravel for Post Holes: Free Draining Granular Backfill Borrow. Follow Section 02061, Part 2.

G. Elastomeric Bearing Pad: 60 hardness. As specified in AASHTO Standard Specifications for Highway Bridges, Division II, Article 18.2.

H. Backer Rod: Refer to Section 03152.

I. Construction Adhesive: Use an approved adhesive from the UDOT Qualified Products Listing.

J. Wood Shims: Any grade fir.

2.2 LIFTING DEVICES

A. Galvanized flush-type that do not project beyond the edge of the panels.

B. Capable of lifting the panel being replaced and of tilting them from horizontal position to vertical position.

C. Shear factor of safety of 2.66:1 for lifting from a flat position and a tension factor of safety of 4:1 for lifting from a vertical position.

D. Designed for shear so that the panels can be lifted from either side.

E. Provide a sealing cover.

2.4 CONCRETE POSTS

A. Cast posts in metal forms.

B. Permanently mark each post with date of casting and post the identification number supplied by the Engineer. Place markings in fresh concrete in the portion of the post which will be embedded in soil.

C. Department accepts posts if they:
   1. Meet the 28 day compressive strength.
   2. Are cured and sealed according to specification.

3. Have been visually inspected and accepted by the Engineer.
4. Have sides that do not deviate from a straight line by more than 3/8 inch per post height.

D. Replace posts that are:
1. Cracked or damaged.
2. Not permanently marked.

2.5 PRECAST CONCRETE PANELS

A. Fabricator will be pre-qualified as a supplier of pre-cast concrete products in accordance with the UDOT Construction and Materials Division Quality Management Plan .

B. Cast the panels to required tolerances regarding all dimensions.
1. Cast in metal forms.
2. Do not use coloring additives.
3. Make panels match in contrast.

C. Permanently stamp panel identification number supplied by Engineer in the top surface of one lifting device prior to casting.

D. Expose the aggregate on both sides. Remove all residue from exposed surfaces.

E. Department accepts panels when they:
1. Meet the 28 day compressive strength.
2. Are cured and sealed according to specification.
3. Have been visually inspected and accepted by the Engineer.
4. Have sides that do not deviate from a straight line by more than1/8 inch.

F. Do not ship panels that:
1. Are cracked or damaged.
2. Do not match in contrast.
3. Are not permanently marked.

PART 3 EXECUTION

3.1 LIMITATIONS

A. Refer to Section 03055 for hot and cold weather limitations.

3.2 CURING

A. Refer to Section 03390.

3.3 DEMOLITION

A. Remove damaged panels and posts from the site. Dispose of fragments at approved landfill or private disposal site.

3.4 TRAFFIC CONTROL

A. Provide all traffic control required for removal and replacement.

B. Submit traffic control plan for approval prior to starting work.

C. Maintain traffic control until repairs are complete and accepted.

3.5 POST HOLES

A. Refer to existing installation for post spacing.

B. Place edge of post holes no nearer than 2 ft from any underground utility.

3.6 LIFTING DEVICES

A. Place waterproof caps in the lifting devices after the panels are permanently placed.

3.7 CONCRETE POSTS

A. Set true to line and grade. Reject and replace posts more than 1/2 inch out of plumb in exposed length.

B. Replace posts that do not adequately support or accept insertion of the precast panels.

C. Replace cracked or damaged posts.

D. D. Glue elastomeric bearing pads to the concrete post following the manufacturer's recommendations.

3.8 PRECAST CONCRETE PANEL PLACEMENT

A. Match existing undamaged panel elevation and placement.

B. Place the panels in the posts with the form side facing the highway.

END OF SECTION

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